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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,371	01/16/2007	**Alan Cuthbertson**	PZ0382	3817

36335 7590 03/25/2010

GE HEALTHCARE, INC.
IP DEPARTMENT 101 CARNEGIE CENTER
PRINCETON, NJ 08540-6231

EXAMINER	
RIDER, LANCE W	
ART UNIT	PAPER NUMBER
1618	
MAIL DATE	DELIVERY MODE
03/25/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,371	CUTHBERTSON ET AL.	
	Examiner	Art Unit	
	LANCE RIDER	1618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) *8-11,13,20,22-28 and 34-36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,12,14-19,21 and 29-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

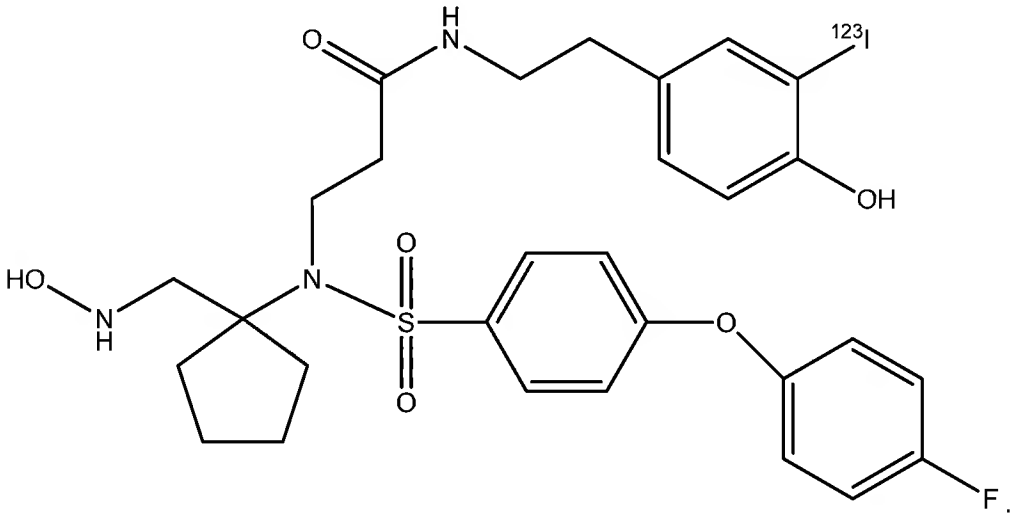
DETAILED ACTION

The current application is now being examined by Lance W. Rider.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 30th 2009 has been entered.

Status of Claims

Claims 1-36 are currently pending. Applicants were required to elect a single invention and a single species of compound in the restriction requirement filed on March 3rd 2008. Applicants elected the chemical compound 24A which has the following structure



The election was made final in the office action filed on July 8th 2008. Applicants amended claims 34-36 in the reply filed on October 7th 2008 to encompass inventions drawn to methods of imaging. These claims were withdrawn in the office action filed on January 7th 2009, being drawn to a non-elected invention by original presentation. The species election was never withdrawn nor was it ever indicated that the search was expanded beyond the elected species.

Claims 1-7, 12, 14-19, 21, and 29-33 read on the currently elected species. Claims 8-11, 13, 20, 22-28, and 34-36 do not read upon the elected invention and are hereby withdrawn. The addition and withdrawal of claims has been done in order to include all of the claims which read on the currently elected species.

Receipt and consideration of Applicants' amended claim set and remarks filed on September 30th 2009 is acknowledged. Rejections and objections not reiterated from previous office actions are hereby withdrawn. The following rejections or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

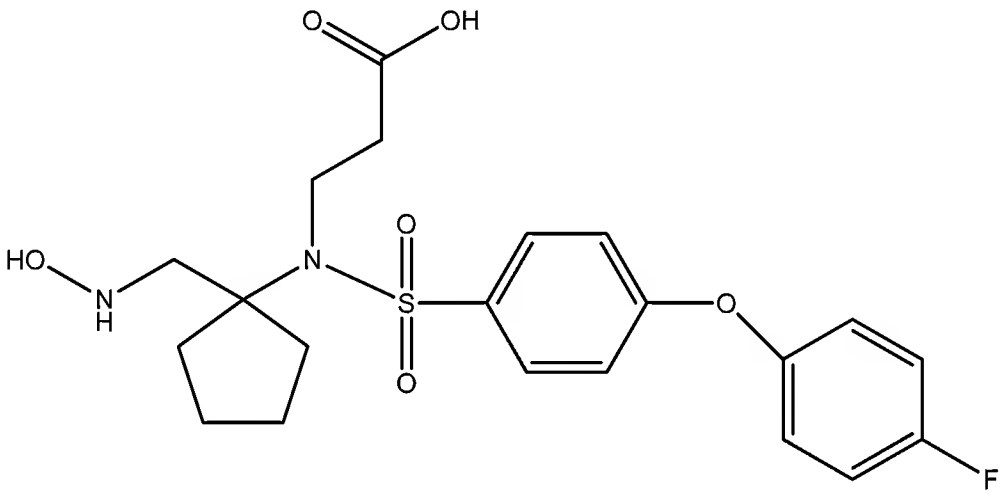
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 12, 14-19, 21, and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahagan et al., European Patent Application EP 1088550 A1, provided in the IDS.

The search conducted in the current application was performed only for the elected species and not expanded to include any additional species. However, incidental to the search additional species of the invention were found in the art. For the

purposes of compact prosecution this art has been applied in the obviousness rejection found below.

Sahagan teaches metalloproteinase inhibitors such as the compound 3-[[4-(4-fluorophenoxy)benzenesulfonyl]-(1-hydroxycarbamoylcyclopentyl)amino]-propionic acid, shown below. (See claim 12.)



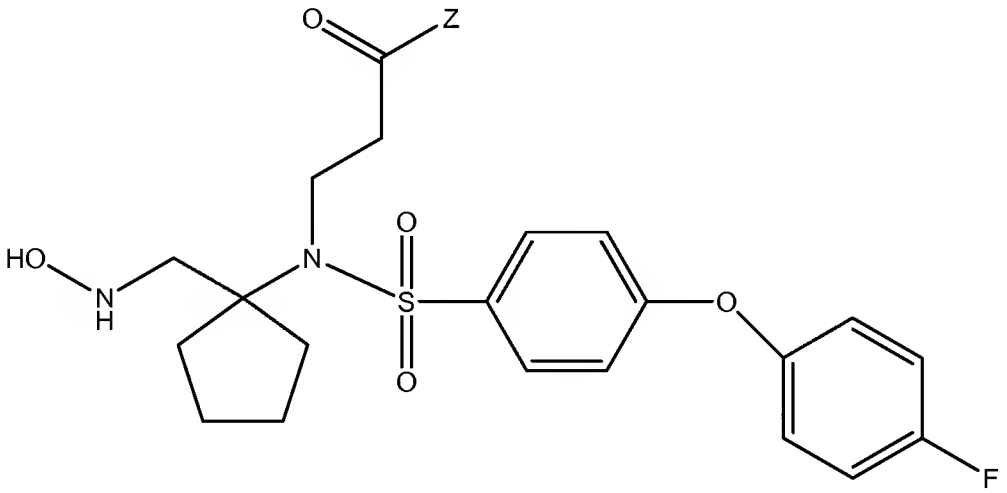
Sahagan further teaches that the compounds can be "isotopically-labeled … and use[d] in drug and/or substrate tissue distribution assays." Sahagan also teaches that useful radioactive isotopes include ^{18}F, a commonly used isotope in PET. (See page 10, paragraph 0043.) A compound containing the radioactive ^{18}F isotope in place of the natural fluorine reads on instant claims 1-7, 12, 14-19, 21, and 29-33.

It would have been prima facie to one of ordinary skill in the art to substitute ^{18}F at the 4 position of the phenyl ring in order to form an isotopically-labeled compound useful in drug and/or substrate tissue distribution assays, such as PET or SPECT. The skilled artisan would have been motivated to replace the singular fluorine present in the compound of Sahagan with its isotopic equivalent given Sahagan's express suggestion

to make such modifications of the molecule in order to form a molecule useful for tissue distribution assays. The skilled artisan would have also chosen to place ^{18}F at this particular position given that the same exact synthetic procedures could be used easing the manufacture of the compounds. Placement of ^{18}F at this position would also ensure that the compounds had the same in vivo inhibitory properties as the un-labeled compound.

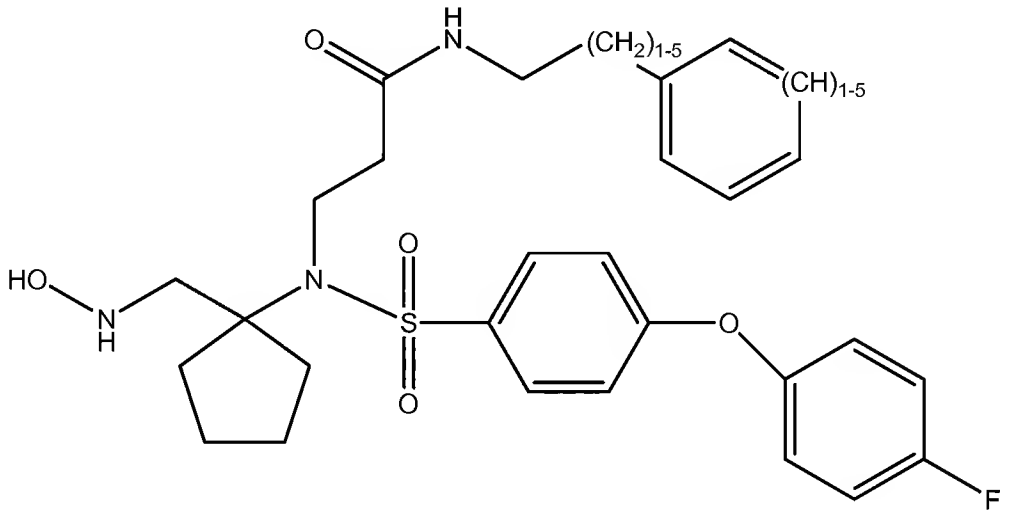
Claims 1-7, 12, 14-19, 21, and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahagan et al., European Patent Application EP 1088550 A1 (provided in the IDS), in view of Wilbur, D.,S., (Bioconjugate Chemistry, 1992).

Sahagan teaches metalloproteinase inhibitors such as the compound 3-[[4-(4-fluorophenoxy)benzenesulfonyl]-(1-hydroxycarbamoylcyclopentyl)amino]-propionic acid substituted at the Z position, below. (See claims 7-12.)

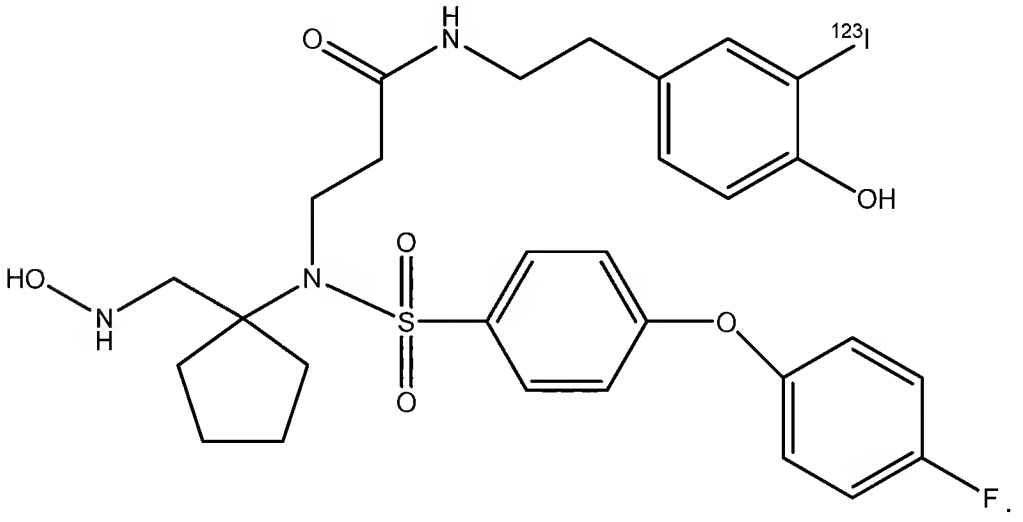


Sahagan further teaches that the compounds can be "isotopically-labeled … and use[d] in drug and/or substrate tissue distribution assays." (See page 10, paragraph

0043.) Sahagan also shows that the Z position can be selected from a large number of different compounds such as a NR^1R^2 radical where R^1 and R^2 can be selected from a (C_1-C_6) alkyl and a (C_6-C_{10}) aryl, below. (See claim 1).

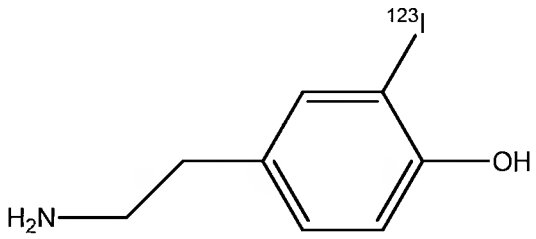


Sahagan does not teach the following compound or kits to make this compound



Wilbur teaches common methods and reagents for radiolabeling compounds for in vivo imaging. Wilbur teaches the use of iodine 123 in compounds used for PET

imaging. (See page 435, paragraphs 4-5.) Wiblur teaches the half lives of the compounds are sometimes short lived. (See table 1.) Wilbur also teaches the use of the specific mono-radio-iodated compound iodotyramine (below)



to label proteins and carbohydrates by alkylating them with this label. (See Table VI, compound 71, page 452, paragraph 1, and page 460, paragraphs 4-6.)

It would have been prima facie obvious for one of ordinary skill in the art at the time of the invention to use the common alkylating agent for labeling compounds with radioiodine, ^{123}I-tyramine, to alkylate the metalloproteinase inhibitor 3-[[4-(4-fluorophenoxy)benzenesulfonyl]-(1-hydroxycarbamoylcyclopentyl)amino]-propionic acid taught by Sahagan in order to form a compound capable of imaging metalloproteinases using PET. The skilled artisan would have been motivated to make this combination because Sahagan states that radiolabeled versions of the metalloproteinase inhibitors would be useful for tissue distribution assays. Wilbur provides a method to radiolabel the compounds of Sahagan so they can be imaged using PET. The skilled artisan would have predicted that this combination would function in vivo for a few reasons. First Sahagan teaches modifications at the Z position which are almost identical to the instantly elected species. Second Sahagan teaches that modification of the compounds at the Z position (discussed above) could be varied greatly without loss of activity. Such

a combination would form the currently elected species and meets the limitations of instant claims 1-7, 12, 14-19, 21.

Regarding instant claims 29-32 drawn to kits, the laboratory in which these compounds were made would read on the kits as instantly claimed. Furthermore, it would have also been obvious to package the components for making such compounds into kit forms for ease of use and fast manufacture. The need for fast manufacture of the compounds in order to prevent the decay of the radioiosotopes would have been obvious to the skilled artisan at the time of the invention given Wilbur's teaching that they decay over time.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sahagan et al., European Patent Application EP 1088550 A1 (provided in the IDS) and of Wilbur, D.,S., (Bioconjugate Chemistry, 1992) as applied to claims 1-7, 12, 14-19, 21, and 29-32 above, and further in view of Fruchtel, J.S., (Angew. Chem. Int. Ed. Engel., 1996).

Sahagan and Wilbur disclose the currently elected compound, methods for making this compound, and kits for its manufacture, as discussed above.

Shagan and Wilbur do not disclose making the compounds using solid phase synthesis or kits for making the compounds using solid phases.

Fruchtel teaches the use of solid phase organic synthesis to make almost any organic compound. Fruchtel teaches that solid phase synthesis is more amenable to

multiple step synthesis, automated synthesis, and simplifies the manufacture of compounds for many different reasons.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use the methods of solid phase organic synthesis taught by Fruchtel to improve the methods for making the compound taught by Sahagan and Wilbur and to improve kits for the manufacture of such a compound. The skilled artisan at the time of the invention would have been motivated to make this combination in order to automate and simplify the synthesis of the compounds reducing their time to make and cost of production.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-7, 12, 14-19, 21, and 29-33 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of copending Application No. 10/544945. Although the conflicting claims are not identical, they are not patentably distinct from each other because instant claim 1 is generic to the compound recited in claim 1 of copending Application No. 10/544945. Claim 1 of the copending application falls entirely within the scope of claim 1 of the instant application anticipating instant claim 1. Claims 2-29 also cover compounds and kits for their manufacture which overlap in scope with the instantly claimed compounds.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

No claims are currently allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LANCE RIDER whose telephone number is (571)270-1337. The examiner can normally be reached on M-F 11-12 and 1-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Hartley can be reached on (571)272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LANCE RIDER/
Examiner, Art Unit 1618

/Michael G. Hartley/
Supervisory Patent Examiner, Art Unit 1618